

Can water quality problems motivate conventional farmers to convert to organic farming?

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Key words: water quality, environment, conversion, organic farmer, motivation

Abstract

Recently, the conservation of water resources has become a major issue in many countries because of the increasing problems of water pollutions by agriculture. In this context, organic farming (OF) is seen as a promising solution to this problem because of its regulation that prohibits the use of chemical fertilisers and pesticides. Our hypothesis is that water quality problems can be a motivation for conventional farmers to convert to OF. This research is based on 65 farmers' interviews (mainly conventional farmers). A qualitative analysis of the interviews was carried out. Six different farmer profiles have been identified depending on farmer's perception of the water question and on their declared willingness to convert to OF. Our results show that the existence of a local problem of water quality can lead farmers to convert to OF. Actions set to develop OF to respond the water quality problem can reach farmers who were not part of the classical pool of "potential converters".

Introduction

In Europe, problems of water pollutions by fertilizers and pesticides used in agriculture are increasing. Developing OF close to polluted water catchments is thus seen by some institutions as a potential solution. But this approach requires a substantial development of OF in these areas.

The literature on conversion to OF has mainly focused on farmers' motivations to convert (Lamine and Bellon 2009). It led to the identification of 2 types of organic farmers: the markets-oriented ones, who converted for economic reasons, and the values-orientated ones, who quote food and health issues as being their main motivations. Environmental concerns seem to have a relatively moderate impact on the farmers' decision to convert (Best 2009). Our hypothesis is that local problems of a water quality can nevertheless motivate conversions to OF. The following questions are addressed in this paper: how do farmers perceive the water quality problems? Would they be willing to convert to OF to solve them?

Material and methods

In France, recent policies have focussed on promoting OF development in areas facing water pollution problems, especially in cases of pesticides contaminations. This promotion of OF is targeted at the scale of water catchment areas. A water catchment area is defined as the area on which a drop of water falling on the ground will find its way to the catchment. Improve the water quality of a catchment implies a substantial change of farming practices in the whole catchment area. The promotion of OF at the scale of catchment area is a new challenge as it requires to target conventional farmers, whose farms are located in certain areas but who are not thinking of converting to OF.

This research was carried out in 4 different water catchment areas in France. Two are located in Rhône-Alpes and two in Burgundy. The catchment areas cover in most cases some hundreds or thousands of hectares. The 4 water catchments encounter agricultural pollution problems and have been listed as priority catchments. For priority catchments, the water catchment managers have to set up action plans to improve water quality. In the first catchment area, the water management is promoting since 2007 the development of OF to protect water quality. In the second and third catchment areas, the action plans to protect water quality have been set during our study. OF was mentioned as one possible action along with others such as reducing pesticides and fertilisers use etc. On the fourth catchment, no action plan has been set up yet.

The research is based on farmers' interviews. Farmers selected for the interviews had to have fields in the water catchment areas. 65 farmers have been interviewed in 2011 and 2012 but the local dynamics were followed on the 4 catchment areas from 2010 to 2013. 60 of the interviewed farmers were doing conventional farming and 5 of them had recently engaged a conversion to OF. The interviews were semi-structured and organized in 4 different parts. The first part aimed at understanding the farm and the farmer histories (farmer

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trajectory, farming system, selling system etc...). The second part was dedicated to identifying the socio-technical and professional networks in which the farmer is integrated. The third part was about farmers' perception of the water question. Finally the last part of the interview was about farmers' attitude towards OF and towards a potential conversion to OF. The qualitative analysis of the interviews was carried out. For the analysis, we highlighted the different conceptions that farmers have of their occupation and their vision of professional excellence (Lémery 2003). This approach to the farmers' vision of their occupation helps us to identify different forms of agriculture considered by them as "suitable" and which constitute the frame in which they finally consider the opportunity to engage this or that change in their activity.

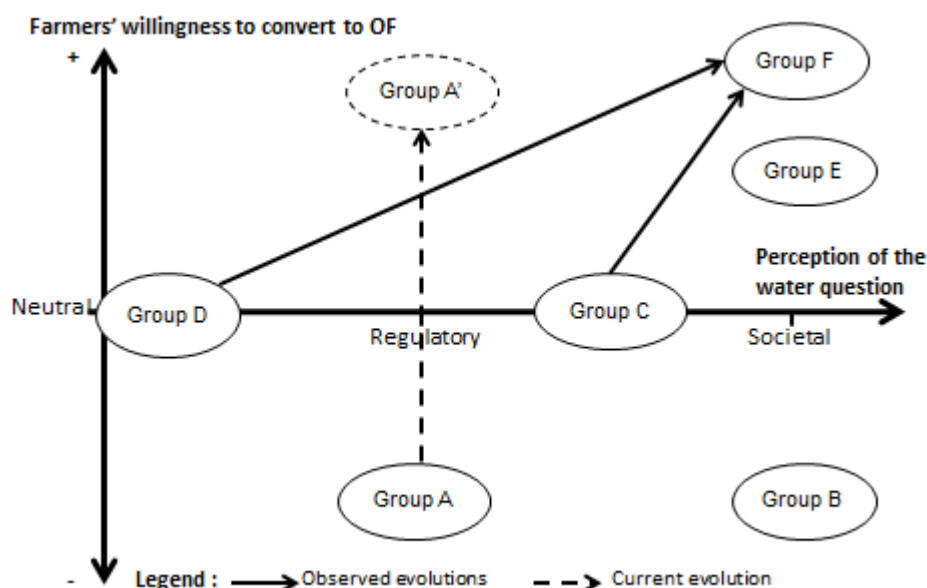
Results

A diversity of farmers' profiles

Six different farmer profiles have been identified based on the interviews' analysis (Figure 1). These profiles have been classified depending on two criteria:

- Farmer's perception of the water question. Three types of perception were identified. The "regulatory vision" is used for farmers who consider that the respect of the general regulations is sufficient to ensure a good quality of the environment and to prove that they are environmentally responsible. The "societal vision" correspond to the vision of farmers who underline that environmental issues are emerging concerns of citizens and that they will increasingly have to take them into account in the future. Finally, some farmers had a "neutral" perception when they did not express any clear opinion about the water problems.
- Farmers' declared willingness to convert to OF. The farmers were classified depending on whether they declared to be willing to convert to OF or not.

Figure 1: Farmers' typology depending on their vision of the water question and their declared willingness to convert to OF



Group A: Farmers having a regulatory vision of the water problems and opposed to converting to OF

Farmers of group A (31% of the interviewees) do not feel responsible for the water quality problems. They consider their current farming practices as non-polluting because they only use authorised products and respect the recommendations for use. They consider that pollution problems are due to old excessive practices. Regarding a potential conversion to OF, they say that OF is too risky or simply say that they do not want to change their farm system. They also put forward that OF does not correspond to the image they have of farming and of what being a good farmer means.

Group B: Farmers with a societal vision of the water problem but who do not consider a conversion to OF

Farmers of group B (11% of the interviewees) consider that the evolution of agriculture over the past decades has caused a number of environmental problems, including water pollution. They have a societal

vision of the water question and express the need for the agricultural sector to take actions to tackle these environmental problems. However these farmers are not planning to convert to OF. They exclude this option because they consider themselves as being too old to carry such a deep change on their farm (they are older than 50 and do not know yet whether they will a successor on the farm). Only clearer perspectives for the future could lead them to giving a different orientation to their farm.

Group C: Farmers having no clear position

Farmers of group C (23% of the interviewees) acknowledge the emergence of environmental problems. They are paying good attention to the increasing environmental concerns amongst citizens. They consider that they will have to take them into account in the future and to adapt their farming practices. Nevertheless, the question of a potential conversion to OF is not on the agenda for the moment. They still have fears related to technical aspects of OF. But they mainly insist on the consequences that a conversion would have on the work load and work organisation on the farm. Finally, they underline that being an organic farmer would be a new and different occupation and that they are not ready for it yet.

Group D: Farmers lost because of the diversity of challenges to face

Farmers of group D (11% of the interviewees) appear to be disoriented because of all the issues they have to take into account as farm managers: environment, profitability of their business etc. They have not really thought of the impact of their practices on water quality. They remain open to improving their practices, potentially even to a conversion to OF. But they are waiting for technical solutions and precise indications on how to proceed. They will not take the initiative of changing their current farming practices if they are not accompanied to do so.

Group E: Farmers having a societal vision of the water problem and thinking of converting to OF

Farmers of group E (17% of the interviewees) are well aware of the environmental issues, including water quality problems. They are in the process of questioning the sustainability of their current farming system. They have already taken the initiative of experimenting organic farming practices in some of their field. They are for example using no pesticides in some field. They are thinking of converting to OF. They are not satisfied with their current farming system, which is not fully in line with their representation of sustainable farming systems. In that sense, they perceive OF as being more in line with their values. However, they still express some fears related to financial consequences of the conversion.

Group F: Farmers who have engaged a conversion to OF to respond to local water problems

Farmers of group F (8% of the interviewees) became aware of the local water problems after actions have been carried out locally to alert farmers and present them the potentiality offered by OF. They have now started a partial or total conversion of their farm to OF. These farmers had never considered converting to OF before the actions started locally. They see OF as being a new personal challenge. But they also consider their conversion to OF as being their contribution to solving a local problem affecting more generally their fellow-citizens.

Water pollution problems as a “trigger event” to convert to OF

This typology shows that the existence of a local problem of water quality can lead farmers to convert to organic farming even if they had not yet considered this option before. This water quality problem can then be considered as a “trigger event” that will influence the farm trajectory (Sutherland et al. 2012). Sutherland *et al.* define “trigger event” as being the event that make the farmer realise that “system change is necessary to meet farm management objective, and/or exploit new opportunities”. That is precisely what is expressed by farmers of group F who decided to turn the local conditions and their associated potential constraints into an opportunity for adapting or re-designing their farming system.

However, this result has to be put into perspective. Indeed all the farmers constituting group F have been met on the same catchment area, which is the one where actions are carried out locally since 2007 to inform farmers about the water quality problems and about the potential offered by organic farming. Conversion to OF requires for most farmer deep changes in their farming practices and in the organisation of their farming system. Such deep changes are slow to put in place. It is therefore necessary to carry out actions for several years to generate local dynamics of conversion to OF. Furthermore, in this water catchment area, the water manager has set up a large set of actions to support the development of OF: information meeting with farmers, financial support through agri-environmental schemes, involvement of the local agricultural cooperatives able to collect organic products in the areas etc. It is therefore the existence of a local dynamics involving different stakeholders that has encourage farmers to convert.

Surprisingly, farmers of group F are not originating from group E (the one of farmers who were already considering converting to OF, which can therefore be considered as the classical pool of “potential converters”). They originate from groups C and D (Figure 1). This means that actions implemented to solve a local problem of water quality by developing OF can reach farmers who were at first not interested by OF. Moreover, if farmers of group A may appear as being reluctant to changing, it appears that some of them are currently engaged in a conversion process on the catchment area where actions for the development of OF are implemented (as represented by Group A' on figure 1). Farmers of group A' keep a regulatory vision of the water question. Indeed, they consider their conversion to OF as an answer to the “pressure” existing locally and pushing them to do so. It is also a way to take advantage of the incentives offered locally to put their farming system in line with local environmental issues voluntarily. The representation they have of their occupation and of OF is nevertheless changing. This is in line with the findings of Barnes *et al.* (2011) who showed that farmers who at first show resistance to compulsory actions for water preservation can actually be quite engaged in the adoption of voluntary measures.

Discussion

The results presented in this paper show that the perception conventional farmers have of OF is changing. More and more farmers declare that they could consider engaging in a conversion to OF in the future. Furthermore, actions set to promote OF as a response to local water quality problem can reach farmers who were not part of the classical pool of “potential converters”, that is who were at first not thinking of converting to OF. Indeed some conventional farmers having fields in water catchment areas have engaged in a conversion after actions have been set locally to promote OF. Water quality problems can in this sense be considered as a trigger event that can bring farmers to reconsider their representation of their occupation and to convert to OF. However, such local conversion dynamics are slow to put in place. It is therefore necessary to set up different types of actions towards farmers. Such actions have to be carried out at local level and for several years to be fruitful.

Acknowledgements

The authors gratefully acknowledge financial support from the Water Agency “Rhône-Méditerranée-Corse” and from the regional council of the “Rhône-Alpes” region.

References

- Barnes A P, Willock J, Toma L & Hall C (2011): Utilising a farmer typology to understand farmer behaviour towards water quality management: Nitrate Vulnerable Zones in Scotland. *Journal of Environmental Planning and Management* 54(4), 477-94.
- Best H (2009): Organic Farming as a rational choice. *Empirical investigations in environmental decision making. Rationality and Society* 21(2), 197-224.
- Lamine C & Bellon S (2009). "Conversion to organic farming: a multidimensional research object at the crossroads of agricultural and social sciences. A review." *Agronomy for Sustainable Development* 29(1):97-112.
- Lémery B (2003): Les agriculteurs dans la fabrique d'une nouvelle agriculture. *Sociologie du Travail* 45(1):9-25.
- Sutherland L-A, Burton R J F, Ingram J, Blackstock K, Slee B & Gotts N (2012): Triggering change: Towards a conceptualisation of major change processes in farm decision-making. *Journal of Environmental Management* 104, 142-51.